DEPARTMENT OF LABOR & ECONOMIC GROWTH

DIRECTOR'S OFFICE

CONSTRUCTION CODE

Filed with the Secretary of State on These rules take effect

(By authority conferred on the director of the department of labor and economic growth by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 1996-2 and 2003-1, MCL 445.2001 and 445.2011)

R 408.30401, R 408.30404, R 408.30405, R 408.30408, R 408.30410, R 408.30411, R 408.30412, R 408.30414, R 408.30415a, R 408.30416, R 408.30418, R 408.30421, R 408.30427, R 408.30429, R 408.30430, R 408.30432, R 408.30437, R 408.30445, R 408.30446, R 408.30447, R 408.30448, R 408.30449, R 408.30451c, R 408.30457, R 408.30458, R 408.30475, R 408.30495, R 408.30499, R 408.30503, R 408.30504, R 408.30505, R 408.30506, R 408.30507, R 408.30508, R 408.30509, R 408.30510, R 408.30511, R 408.30512, R 408.30513, R 408.30514, R 408.30516, R 408.30518, R 408.30520, R 408.30521, R 408.30522, R 408.30525, R 408.30526, R 408.30528, R 408.30529, R 408.30530, R 408.30531, R 408.30534, R 408.30536, R 408.30539, R 408.30540, R 408.30543, R 408.30544, R 408.30545, R 408.30546 and R 408.30547 of the Michigan Administrative Code are amended and R 408.30442 and R 408.30459 are added and R 408.30417 and R 408.30444 of the code are rescinded as follows:

PART 4. BUILDING CODE

R 408.30401 Applicable code.

Rule 401. The provisions of the international building code, 20036 edition, including appendices F, G, and H, except for sections 104.8, 108.2 to 108.6, 112.2, 112.3, 114.3, 415.76.2.2 to 415.76.2.10, 415.76.3.1 to 415.76.3.5.2, table 1608.2, 2902 to 2902.6.2, **2902.5**, **Table 2902.1**, 3006.5, the definition of "recreational vehicle" in Appendix G, and, IECC-20036, ICC EC-20036, IMC-20036, IPC-20036, IPSDC-20036 listed in chapter 35, and the provisions of the international residential code, 20036 edition, including appendices A, B, C, D, E, F, G, J, K, and L, M, N, O, and O except for sections R104.8, R108.2, R108.3, R108.4, R108.5, R112.3, N1101 to N1104.1, N1103.6 tables N1101.2, N1102.1, N1102.1.1.1(1), N1102.1.1.1(2), N1102.1.1.2, N1102.4, N1103.1, N1103.5, and N1104.1, sections P2503.8, P2709.2.13, AJ102.4, Figure N3 and IBC-20036, ICC EC-20036, IECC-20036, IMC-20036, IPC-20036, NFPA 70-025 listed in chapter 43 govern the construction, alteration, relocation, demolition, use, and occupancy of buildings and structures, and, with exceptions noted, the international building code and the international residential code are adopted by reference in these rules. All references to the International Building Code, International Residential Code, International Energy Conservation Code, International Electrical Code, International Existing Building Code, International Mechanical Code, and International Plumbing

Code mean the Michigan Building Code, Michigan Residential Code, Michigan Uniform Energy Code, Michigan Electrical Code, Michigan Rehabilitation Code for Existing Buildings, Michigan Mechanical Code, and Michigan Plumbing Code respectively. The codes are available for inspection at the Okemos office of the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety. The codes may be purchased from the International Code Council, 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041500 New Jersey Avenue, N.W., 6th Floor, Washington, D.C. 20001, or from the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan 48864, at a cost as of the time of adoption of these amendatory rules of \$65.0070.00 and \$45.0055.00 respectively.

R 408.30404 Approval Approved materials and equipment.

Rule 404. Section 104.9 of the code is amended to read as follows:

104.9. Approved materials and equipment. Materials, equipment, and devices shall be constructed or installed in accordance with approvals granted under section 21 of 1972 PA 230, MCL 125.1521the act or by the building official. The building official shall review reports prepared by recognized evaluation services and determine if the intent of the code is met.

R 408.30405 Professional architectural and engineering services.

Rule 405. Section 106.1 of the code is amended to read as follows:

106.1. Submittal documents. Construction documents, special inspection and structural programs and other data shall be submitted in 1 or more sets with each application for a permit. The construction documents shall be prepared by, or under the direct supervision of, a registered design professional when required by article 20 of 1980 PA 299, MCL 339.101 to 339.2721et seq. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

R 408.30408 Fees.

Rule 408. Section 108.1 of the code is amended to read as follows:

108.1. Payment of fees. The fees prescribed by section 22 of 1972 PA 230, MCL 125.1522, the act shall be paid to the enforcing agency of the jurisdiction before a permit to begin work for new construction, alteration, removal, demolition, or other building operation may be issued. In addition, an amendment to a permit necessitating an additional fee shall not be approved until the additional fee has been paid.

R 408.30410 Violations.

Rule 410. Section 113.4 of the code is amended to read as follows:

113.4. Violation penalties. It is unlawful for any person, firm, or corporation to violate a provision of the code or fail to conform with any of the requirements thereof, or erect, construct, alter, extend, repair, move, remove, demolish, or occupy any building, structure, or equipment regulated by the code, or cause work to be performed or done, in conflict with or in violation of the approved construction documents or directive of the

enforcing agency, or a permit or certificate issued under the code. A violator shall be assessed a fine in accordance with section 23 of 1972 PA 230, MCL 125.1523.the act.

R 408.30411 Stop-work order.

Rule 411. Section 114.2 of the code is amended to read as follows:

114.2. Notice to owner**Issuance**. Upon notice from the enforcing agency, work on any building or structure that is being done contrary to the code or in a dangerous or unsafe manner shall immediately cease. Notice shall be in accordance with section 12 of 1972 PA 230, MCL 125.1512the act. A person who is served with a stop work order, except for work that the person is directed to perform to remove a violation or unsafe condition is subject to the penalty provisions prescribed in section 23 of 1972 PA 230, MCL 125.1523.the act.

R 408.30412 Certificate of use and occupancy.

Rule 412. Section 110.1 of the code is amended to read as follows:

110.1. Use and occupancy. A building or structure shall not be used or occupied, and a change in the existing occupancy classification of a building or structure or portion thereof shall not be made until a certificate of occupancy has been issued in accordance with section 13 of 1972 PA 230, MCL 125.1513.the act.

R 408.30414 Means of AppealBoard of appeals.

Rule 414. Sections 112.1 and 112.3 of the code is are amended to read as follows:

112.1 Means of appeal. An interested person may appeal a decision of the enforcing agency to the board of appeals in accordance with the act. An application for appeal shall be based on a claim that the true intent of the code or the rules governing construction have been incorrectly interpreted, the provisions of the code do not apply, or an equal or better form of construction is proposed. The application shall be filed in accordance with section 14 of 1972 PA 230, MCL 125.1514. The decision of a local board of appeals may be appealed to the construction code commission in accordance with the act and time frames.

Exception: Requests for barrier free design exception shall be in accordance with 1966 PA 1, MCL 125.1352 to 125.1356.

112.3 Qualifications. The board of appeals shall consist of members who are qualified in accordance with the act.

R 408.30415a Definitions.

Rule 415a. The **definition of act is added and the** definitions of building, registered design professional, and structure in section 202 of the code are amended to read as follows:

202. Definitions.

"Act" means 1972 PA 230, MCL 125.1501 to 125.1531 and known as the Stille-DeRossett-Hale single state construction code act.

"Building" means a combination of materials, whether portable or fixed, forming a structure affording a facility or shelter for use or occupancy by persons, animals, or property. The term does not include a building incidental to the use for agricultural purposes of the land on which the building is located if it is not used in the business of

retail trade. The term shall be construed as though followed by the words "or part or parts of the building and all equipment in the building" unless the context clearly requires a different meaning.

"Building official" means the person who is appointed and employed by a governmental subdivision charged with the administration and enforcement of the state code or codes and who is registered in accordance with the requirements of 1986 PA 54, MCL 338.2301 to 338.2313et seq.

"Registered design professional" means an individual who is licensed under article 20, 1980 PA 299, MCL 339.2001**to 339.2721.**et seq.

"Structure" means that which is built or constructed, an edifice or building of any kind, or a piece of work artificially built up or composed of parts joined together in some definite manner. Structure does not include a structure incident to the use for agricultural purposes of the land on which the structure is located and does not include works of heavy civil construction including without limitation any of the following:

- (a) A highway.
- (b) A bridge.
- (c) A dam.
- (d) A reservoir.
- (e) A lock.
- (f) A mine.
- (g) A harbor.
- (h) A dockside port facility.
- (i) An airport landing facility.
- (j) A facility for the generation, or transmission, or distribution of electricity.

Structure shall be construed as though followed by the words "or part or parts of the structure and all equipment in the structure," unless the context clearly indicates otherwise.

R 408.30416 Occupancy classification. Area and height increases.

Rule 416. **Sections 305.2, 308.5.1, 308.5.2, and 310.1 are added to read as follows:** Section 406.3.6 of the code is amended to read as follows:

-406.3.6. Area and height increases. The allowable area and height of open parking garages shall be increased in accordance with the provisions of this section. Garages with sides open on 3/4 of the building perimeter are permitted to be increased by 25% in area and 1 tier in height. Garages with sides open around the entire building perimeter are permitted to be increased 50% in area and 1 tier in height. For a side to be considered open under the provisions of this rule, the total area of openings along the side shall not be less than 50% of the interior area of the side at each tier, and such openings shall be equally distributed along the length of the tier.

Allowable tier areas in table 406.3.5 shall be increased for open parking garages constructed to heights less than the table maximum. The gross tier area of the garage shall not exceed that permitted for the higher structure. At least 3 sides of each such larger tier shall have continuous horizontal openings not less than 30 inches (762 mm) in clear height extending for at least 80% of the length of the sides, and no part of such larger tier shall be more than 200 feet (60 960mm) horizontally from such an opening. In addition, each such opening shall face a street or yard accessible to a street with a width

of at least 30 feet (9144 mm) for the full length of the opening, and standpipes shall be provided in each such tier.

- Open parking garages of type II construction, with all sides open, shall be unlimited in allowable area where the height does not exceed 75 feet (22 860 mm). For a side to be considered open, the total area of openings along the side shall not be less than 50% of the interior area of the side at each tier, and such openings shall be equally distributed along the length of the tier. All portions of tiers shall be within 200 feet (60 960 mm) horizontally from such openings.
- 305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than 6 children older than $2\frac{1}{2}$ years of age, shall be classified as a group E occupancy.
- 308.5.1 Adult care facility. A facility that provides accommodations for less than 24 hours for more than 6 unrelated adults and provides supervision and personal care services shall be classified as group I-4.

Exception: A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as group A-3.

308.5.2 Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than 6 children $2\frac{1}{2}$ years of age or less shall be classified as group I-4.

Exception: A child day care facility that provides care for more than 6 but not more than 100 children 2 $\frac{1}{2}$ years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

- 310.1 Residential group R. Residential group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional group I or when not regulated by the Michigan residential code in accordance with Section 101.2. Residential occupancies shall include the following:
- R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including all of the following:
- a. Boarding houses (transient).
- b. Hotels (transient).
- c. Motels (transient).
- R-2 Residential occupancies containing sleeping units or more than 2 dwelling units where the occupants are primarily permanent in nature, including the following:
- a. Apartment houses.
- b. Boarding houses (not transient).
- c. Convents.
- d. Dormitories.
- e. Fraternities and sororities.
- f. Hotels (nontransient).
- g. Monasteries.
- h. Motels (nontransient).
- i. Vacation timeshare properties.

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for group R-3.

- R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as group R-1, R-2, R-4 or I, including the following:
- a. Buildings that do not contain more than 2 dwelling units.
- b. Adult facilities that provide accommodations for 6 or fewer persons of any age for less than 24 hours.
- c. Child care facilities that provide accommodations for 6 or fewer persons of any age for less than 24 hours.
- d. Congregate living facilities with 16 or fewer persons.

Adult and child care facilities that provide accommodations for 6 or fewer persons that are within a single-family home may comply with the international residential code.

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including, more than 6, but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for group R-3, except as otherwise provided for in this code, or shall comply with the Michigan residential code.

R 408.30417 **Rescinded.**High rise buildings.

- Rule 417. Sections 907.2.12 and 907.8.2 of the code are amended to read as follows:
- -907.2.12. High rise buildings. Buildings having floors used for human occupancy located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with section 907.2.12.2.
- **Exceptions:**
- 1. Airport traffic control towers in accordance with sections 412 and 907.2.22.
- 2. Open parking garages in accordance with section 406.3.
- -3. Buildings with an occupancy in group A-5.
- -4. Low hazard special occupancies in accordance with section 503.1.21.
- -5. Buildings with an occupancy in group H-1, H-2, or H-3 in accordance with section 415.
- 907.8.2. High-rise buildings. In buildings used for human occupancy that have floors located more than 55 (16 764 mm) above the lowest level of fire department vehicle access, a separate zone by floor shall be provided for all of the following types of alarminitiating devices where provided:
- 1. Smoke detectors.
- 2. Sprinkler water-flow devices.
- -3. Manual fire alarm boxes.
- 4. Other approved types of automatic fire detection devices or suppression systems.

R 408.30418 Maximum floor area allowances per occupant.

Rule 418. Table 1004.1.21 of the code is amended to read as follows:

MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

MAXIMUM FLOOR AREA ALI	30 WIN COLD FER COCCITIVE
OCCUPANCY FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Assembly with fixed seats	See section 1004.7
Assembly without fixed seats	
Concentrated (chairs only-not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net
Bowling centers, allow 5 persons for each lane	
including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms-other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	<u> </u>
Classroom area	20 net
Shops and other vocational room areas	50 net
Locker rooms	15 gross
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas	7.8
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mercantile	2 2 6 2 2 2 2
Areas on other floors	60 gross
Basement and grade floor areas	30 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential Residential	200 gross
Skating rinks, swimming pools	-vo 81000
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 gloss 15 net
Accessory storage areas, mechanical equipment	15 net
room	300 gross
Warehouses	500 gross
For SI: 1 aguara foot = 0.0020 m ²	200 81033

For SI: 1 square foot = 0.0929 m^2

R 408.30421 Emergency escape and rescue.

Rule 421. Section 102**56**.1 of the code is amended to read as follows:

10256.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in group R as applicable in section 101.2, classrooms greater than 250 feet² (23.2 m²) in group E, and group I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least 1 exterior emergency escape and rescue opening in accordance with this section. Where basements contain 1 or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such opening shall open directly into a public street, public alley, yard, or court.

Exceptions:

- 1. In other than group R-3 occupancies as applicable in section 101.2, buildings equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1 or 903.3.1.2.
- 2. In other than group R-3 occupancies as applicable in section 101.2, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to 2 remote exits in opposite directions.
- 3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
- 4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
- 5. High-rise buildings in accordance with section 403.
- 6. Emergency escape and rescue openings are not required from basements or sleeping rooms which have an exit door or exit access door that opens directly into a public street, public alley, yard, egress court, or to an exterior exit balcony that opens to a public street, public alley, yard, or egress court.
- 7. Basements without habitable spaces and having not more than 200 square feet (18.6 square meters) in floor area shall not be required to have emergency escape windows.
- R 408.30427 Barrier free design for buildings, structures, and improved areas.
- Rule 427. Sections 1101.2 and 1109.7 of the code are amended and section 1103.2.156 is added to the code to read as follows:
- 1101.2 Design. Buildings and facilities shall be designed and constructed to be accessible in accordance with **1966 PA 1**, MCL **125.1351 to 125.1356**, this code and ICC/**ANSI** A 117.1, except sections 611 and 707.
- 1109.7 Lifts. Platform (wheelchair) lifts are permitted tomay be a part of a required accessible route in new construction where indicated in items 1 to 710. Platform (wheelchair) lifts shall be installed in accordance with the Michigan elevator code, R 408.8101R 408.7001 to R 408.8695.
- 1. An accessible route to a performing area and speakers' platforms in occupancies in group A.
- 2. An accessible route to wheelchair spaces required to comply with the wheelchair space dispersion requirements of sections 1108.2.2 to 1108.2.4.

- 3. An accessible route to spaces that are not open to the general public with an occupant load of not more than 5.
- 4. An accessible route within a dwelling or sleeping unit.
- 5. An accessible route to wheelchair seating spaces located in outdoor dining terraces in A-5 occupancies where the means of egress from the dining terraces to a public way are open to the outdoors.
- 6. An accessible route to raised judges' benches, clerks' stations, jury boxes, witness stands, and other raised or depressed areas in a court. An accessible route to jury boxes and witness stands; raised courtroom stations including judges' benches, clerks' stations, bailiffs' stations, deputy clerks' stations and court reporters' stations; and to depressed areas such as the well of the court.
- 7. An accessible route where existing exterior site constraints make use of a ramp or elevator infeasible. An accessible route to load and unload areas serving amusement rides.
- 8. An accessible route to play components or soft contained play structures.
- 9. An accessible route to team or player seating areas serving areas of sport activity.
- 10. An accessible route where existing exterior site constraints make use of a ramp or elevator infeasible.
- 1103.2.156. Military, fire service, and police facilities. Housing, bathing, toilet, training, and storage areas intended for use and occupancy exclusively by military, fire service, police, or security personnel required to be physically agile are not required to be accessible.

R 408.30429 High-rise buildings.

Rule 429. Sections 403.1, **403.13**, **907.2.12**, **and 907.8.2** of the code isare amended to read as follows:

403.1. Applicability. The provisions of this section shall apply to buildings having the occupied floors located more than 55 feet (**16764 mm**) above the lowest level of fire department vehicle access.

Exception: The provisions of this section shall not apply to the following buildings and structures:

- 1. Airport traffic control towers in accordance with section 412 of the code.
- 2. Opening parking garages in accordance with section 406.3 of the code.
- 3. Buildings with an occupancy in group A-5 in accordance with section 303.1 of the code
- 4. Low-hazard special industrial occupancies in accordance with section 503.1.2503.1.1 of the code.
- 5. Buildings with an occupancy in group H-1, H-2, or H-3 in accordance with section 415 of the code.
- 6. Existing buildings having occupied floor levels not more than 75 feet (22860 mm) above the lowest level of fire department vehicle access where the local unit of government complies with the following:
- 6.1. The local unit of government has a municipal fire department with an ISO rating of 3 or lower, employing a full-time career fire fighting staff.

- 6.2. The governing body of the local unit of government has passed a resolution affirming the use of this exception and filed that resolution with the department of consumer and industry services labor & economic growth, bureau of construction codes.
- 403.13. Smokeproof exit enclosures. Every required stairway serving floors more than 55 feet (16764 mm) above the lowest level of fire department vehicle access shall comply with sections 909.20 and 1020.1.7 of the code.
- 907.2.12. High-rise buildings. Buildings having floors used for human occupancy located more than 55 feet (16764 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with section 907.2.12.2 of the code.

Exceptions:

- 1. Airport traffic control towers in accordance with sections 412 and 907.2.22 of the code.
- 2. Open parking garages in accordance with section 406.3 of the code.
- 3. Buildings with an occupancy in group A-5.
- 4. Low-hazard special occupancies in accordance with section 503.1.1 of the code.
- 5. Buildings with an occupancy in group H-1, H-2, or H-3 in accordance with section 415 of the code.
- 907.8.2. High-rise buildings. In buildings used for human occupancy that have floors located more than 55 feet (16764 mm) above the lowest level of fire department vehicle access, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:
- 1. Smoke detectors.
- 2. Sprinkler water-flow devices.
- 3. Manual fire alarm boxes.
- 4. Other approved types of automatic fire detection devices or suppression systems.

R 408.30430 Liquefied petroleum gas distribution facilities.

Rule 430. Section 415.7.3415.6.3 of the code is amended to read as follows: 415.7.3.415.6.3. Liquefied petroleum gas distribution facilities. The design and construction of propane, butane, propylene, butylene, and other liquefied petroleum gas distribution facilities shall conform to the applicable provisions of **the Michigan** liquified petroleum gas code, R 29.3801 to R 29.4035.sections 415.7.3.1 to 415.7.3.5.2 of the code. The storage and handling of liquefied petroleum gas systems shall conform to the international fire code listed in chapter 35. The design and installation of piping, equipment, and systems that utilize liquefied petroleum gas shall be in accordance with the international fuel gas code listed in chapter 35. Liquefied petroleum gas distribution facilities shall be ventilated in accordance with the Michigan mechanical code, R 408.30901a to R 408.30998a, and the requirements of the Michigan rules for the storage and handling of flammable and combustible liquids, R 29.4101 to R 29.5516.1941 PA 207.

R 408.30432 Flammable and combustible liquids.

Rule 432. Section 415.7.2415.6.2 of the code is amended to read as follows:

415.7.2415.6.2. Flammable and combustible liquids. The storage, handling, processing, and transporting of flammable and combustible liquids shall be in accordance with the Michigan mechanical code, R 408.30901a to R 408.30998a, and the international fire code listed in chapter 35, and the requirements of the Michigan rules for the storage and handling of flammable and combustible liquids, R 29.4101 to R 29.5516.1941 PA 207.

R 408.30437 Truss design drawings.

Rule 437. Section 2303.4.1.2 of the code is amended to read as follows:

2303.4.1.2 Truss design drawings. Truss construction documents shall be prepared by a registered design professional and shall be provided to the building official and approved prior to installation. These construction documents shall include, at a minimum, the following information. Truss shop drawings shall be provided with the shipment of trusses delivered to the job site.

- 1. Slope or depth, span and spacing.
- 2. Location of joints.
- 3. Required bearing widths.
- 4. Design loads as applicable.
- 5. Top chord live load (including snow loads).
- 6. Top chord dead load.
- 7. Bottom chord live load.
- 8. Bottom chord dead load.
- 9. Concentrated loads and their points of application.
- 10. Controlling wind and earthquake loads.
- 11. Adjustments to lumber and metal connector plate design value for conditions of use.
- 12. Each reaction force and direction.
- 13. Metal connector plate type, size, thickness or gage, and the dimensioned location of each metal connector plate except where symmetrically located relative to the joint interface.
 - 14. Lumber size, species, and grade for each member.
 - 15. Connection requirements are required for all of the following:
 - a. Truss to truss girder.
- b. Truss ply to ply.
- c. Field species.
- 16. Calculated deflection ratio or maximum deflection for live and total load.
- 17. Maximum axial compression forces in the truss members to enable the building designer to design the size, connections, and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss construction documents or on supplemental documents.
 - 18. Required permanent truss member bracing location.

R 408.30442 Automatic sprinkler systems.

Rule 442. Section 903.2.7 of the code is amended to read as follows:

903.2.7. Group R. An automatic sprinkler system installed in accordance with section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exception: Camp buildings in remote areas without municipal water supply that meet all of the following:

- 1. Not more than 1 story, 2000 square feet (186 m²) and 25 sleeping units.
- 2. Are used not more than 5 months in a year.
- 3. Shall be provided with not less than 2 exits in compliance with section 1019.
- 4. Shall not be provided with cooking equipment.
- 5. Provided with a manual fire alarm system and smoke alarms throughout in compliance with NFPA 72 as listed in chapter 35. For cabins sleeping 4 or less only smoke alarms are required.
- 6. Storage and equipment rooms shall be protected by a 1-hour fire partition.
- 7. Compliance with all applicable requirements of the code.

R 408.30444. **Rescinded.** Water resistive barrier.

- Rule 444. Section 1404.2 of the code is amended to read as follows:
- 1404.2. Water-resistive barrier. A minimum of 1 layer of No. 15 asphalt felt, complying with ASTM D 226, as listed in chapter 43, for type 1 felt, shall be attached to the studs or sheathing, with flashing as described in section 1405.3, in such a manner as to provide a continuous water resistive barrier behind the exterior wall veneer.

R 408.30445 Automatic sprinkler systems.

Rule 445. Section 903.2.10.3 of the code is amended to read as follows:

903.2.10.3. Buildings more than 30 feet (9144 mm) in height. An automatic sprinkler system shall be installed throughout a building that has a floor level which has an occupant load of 30 or more occupants and which is located 30 feet or more above the lowest level of fire department vehicle access.

Exceptions:

- 1. Airport control towers.
- 2. Open parking structures.
- 3. Occupancies in group F-2.
- 4. Existing buildings having occupied floor levels not more than 55 feet in height above the lowest level of fire department vehicle access, where the local unit of government complies with the following parameters:
- 4.1. The local unit of government having a municipal fire department with an ISO rating of 3 or lower, employing a full time career fire fighting staff.
- 4.2. The governing body of the local unit of government has passed a resolution affirming the use of this exception and filed that resolution with the department of labor & economic growth, bureau of construction codes and fire safety.

R 408.30446 Smoke alarm locations.

Rule 446. Sections 907.2.10.1.2.1 and 907.2.10.1.2.2 are added to the code as follows: 907.2.10.1.2.1 Smoke alarm locations in existing buildings constructed before November 6, 1974. Within each dwelling unit or sleeping unit, a single-station smoke alarm shall be installed in the following locations:

- 1. In each sleeping room or each area directly outside the sleeping room.
- 2. On each floor level including the basement level.

For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than 1 full story below the upper level. Section 907.2.10.1.2.2 Equipment requirements.

907.2.10.1.2.2. The required equipment for smoke alarms shall consist of the following:
1. Installation. Smoke alarm devices shall be listed and installed in accordance with the manufacturer's installation requirements, the provisions of the code, and the provisions of NFPA 72 which is adopted by reference in these rules as listed in chapter 35. The standard is available for inspection at the Michigan Department of Labor & Economic

Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan, 48864, or from NFPA, 1 Batterymarch Park, Quincy, MA, 02269-9101, at a cost as of the time of adoption of these amendatory rules of \$ 48.00.

- 2. Power Source. The equipment shall be operable by power from 1 of the following primary sources:
- a. The building wiring provided the wiring is served from a commercial source and is equipped with a battery backup. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.
- b. A non-rechargeable battery able to power the smoke alarm in the normal condition for a life of 5 years.
- c. A rechargeable battery, with proper charging, able to power the alarm for a life of 5 years.
- d. A commercial use alarm system with battery backup listed and approved in accordance with the commercial fire warning equipment provisions of NFPA 72, as adopted by reference in this rule.
- 3. Audible Alarm Notification. The activation of the alarm signal shall produce a sound that is audible in all occupiable dwelling areas.
- 4. Testing and Maintenance. The owner of a dwelling unit, in which required or optional fire detection or fire protection systems equipment is installed, shall be responsible for the proper operation, testing, and maintenance of the equipment in accordance with the manufacturer's instructions included with the equipment. The occupant of rental dwelling units shall be responsible for the periodic operational testing and periodic cleaning of the installed equipment within the rental unit in accordance with the testing instructions provided in the manufacturer's instructions for the equipment. If the system fails, breaks, or is out of service, it shall be repaired and functional within 30 days.

Exception: Smoke alarms and devices installed in buildings constructed before November 6, 1974 where an installation was approved by the appropriate enforcing agency under regulations in effect at the time of the installation shall be considered to comply with the provisions of the code.

R 408.30447 Smokeproof enclosures.

Rule 447. Section 1019.1.81020.1.7 of the code is amended to read as follows: 1019.1.81020.1.7. Smokeproof enclosures. In buildings required to comply with section 403 or 405 of the code, each of the exits of a building that serves stories where the floor surface is located more than 55 feet (16764 mm) above the lowest level of fire department vehicle access or more than 30 feet (9144 mm) below the level of exit

discharge serving such floor levels shall be a smokeproof enclosure or pressurized stairway in accordance with section 909.20 of the code.

R 408.30448 Electrical.

Rule 448. Sections 2701.1, and 2702.1, and 2702.2.6 of the code are amended to read as follows:

- 2701.1 Scope. This chapter governs the electrical components, equipment, and systems used in buildings and structures covered by the code. Electrical components, equipment, and systems shall be designed and constructed in accordance with the Michigan electrical code, R 408.30801 to R 408.30880.
- 2702.1. Installation. Emergency and standby power systems shall be installed in accordance with the Michigan electrical code, R 408.30801 to R 408.30880.
- 2702.2.6. Accessible means of egress platform lifts. Standby power in accordance with this section and the Michigan elevator code, R 408.7001 to R 408.8695, shall be provided for platform lifts that are part of an accessible means of egress in accordance with section 1007.5 of the code.

R 408.30449 Frost protection.

Rule 449. Section 1805.2.1 of the code is amended to read as follows:

- 1805.2.1. Frost protection. Except where otherwise protected from frost, foundation walls, piers, and other permanent supports of buildings and structures shall be protected from frost by at least one1 of the following methods:
 - 1. Extending not less than 42 inches (1067 mm) below finish grade.
- 2. Constructing in accordance with ASCE-32 listed in chapter 35.
- 3. Erecting on solid rock.

Exceptions:

- 1. Free-standing buildings meeting all of the following conditions shall not be required to be protected:
- a. Classified in importance category I in accordance with section 1604.5 of the code. (see table 1604.5).
- b. Area of -400-600 square feet (3755.74 m²) or less for light-frame construction or 400 square feet (37 m²) or less for other than light-frame construction.
- c. Eave height of 10 feet (3048 mm) or less.
- 2. Upon evidence of the existence of any of the following conditions, the building official may modify the footing depth accordingly:
- a. Freezing temperatures.
- b. Soil type.
- c. Groundwater conditions.
- d. Snow depth experience.
- e. Exposure to the elements.
- f. Other specific conditions identified by the building official that may affect the foundation system.

Footings shall not bear on frozen soil unless such frozen condition is of a permanent character.

R 408.30451c. Flood zonesloads.

- Rule 451c. Section 1612.4 of the code is amended **and 1612.3.1, 1612.4.1, 1612.4.2, 1612.4.3, 1612.4.4, and 1612.4.5 are added to the code** to read as follows:
- 1612.3.1. Alternate flood hazard provisions. Absent the adoption of a flood hazard map and supporting data, flood hazard areas as determined by the state under its administration of the Part 31, floodplain regulatory authority of the natural resources and environmental protection act, 1994 PA 451, MCL 324.101 to 324.90106, shall become the basis for regulation of floodplain development within the community and section 1612 shall apply to buildings and structures within those areas.
- 1612.4. Design and construction. Buildings and structures located in flood hazard areas subject to high velocity wave action shall be designed and constructed in accordance with ASCE 24 listed in chapter 35. Type II buildings identified by ASCE shall have the lowest floors elevated 1 foot above design flood elevations. Type III and IV buildings shall have the lowest floors elevated 1 foot above the 500-year flood level. Buildings and structures as defined in ASCE 24 table 1-1, listed in chapter 35, and located in flood hazard areas shall be designed and constructed in accordance with sections 1512.4.1 to 1612.4.5 of the code.
- 1612.4.1 Buildings and structures located in flood hazard areas subject to high velocity wave action shall be designed and constructed in accordance with flood hazard areas subject to high velocity wave action of ASCE 24 listed in chapter 35.
- 1612.4.2 Type II buildings located in flood hazard areas not subject to high velocity wave action shall be designed and constructed in accordance with section 2.0 basic requirements for flood hazard areas and shall have the lowest floors elevated 1 foot (305 mm) above the 100-year design flood elevation.
- 1612.4.3 Type III and IV buildings located in flood hazard areas not subject to high velocity wave action shall be designed and constructed in accordance with section 2.0 basic requirements for flood hazard areas and shall have the lowest floors elevated 1 foot (305 mm) above the 500-year flood level.
- 1612.4.4 If the lowest floor of nonresidential buildings and structures as defined in ASCE 24 listed in chapter 35 are located in flood hazard areas and are not elevated as required in accordance with sections 1612.4.2 and 1612.4.3, Type II buildings shall be flood proofed to 1 foot above the design flood elevations and Type III & IV buildings shall be flood proofed to 1 foot above the 500-year flood level in accordance with the flood proofing requirements contained in ASCE 24 listed in chapter 35.
- 1612.4.5 Crawl space interior floor grade elevation shall comply with section 1807.1.2.1 of the code.

R 408.30457 Mechanical systems.

Rule 457. Section 2801.1 of the code is amended to read as follows:

2801.1. Scope. Mechanical appliances, equipment, and systems shall be constructed, installed, and maintained in accordance with the Michigan mechanical code, R 408.30901a to R 408.30998a, and the international fuel gas code listed in chapter 35. Masonry chimneys, fireplaces, and barbeques shall comply with the Michigan mechanical code, R 408.30901a to R 408.30998a, and chapter 21 of the code.

- R 408.30458 Elevators and conveying systems.
- Rule 458. Sections 3001.1, 3001.2, 3001.4, 3002.5, 3002.6, **3003.1**, 3003.2, **and** 3004.54, and 3004.6 of the code are amended and sections 3001.2.1, and 3001.2.2, **3003.1.5** and **3004.5** are added to the code to read as follows:
- 3001.1. Scope. The design, construction, installation, alteration, and repair of elevators and conveying systems and their equipment shall conform with the requirements of the Michigan elevator laws and rules, MCL 408.801 to 408.824et seq., MCL 338.2151 to 338.2160et seq., and R 408.8101R 408.7001 to R 408.8695 and this chapter. Installation or construction in flood hazard areas established in section 1612.3 shall comply with ASCE 24 listed in chapter 35.
- 3001.2. Other devices. Other devices shall conform to the requirements of sections 3001.2.1 and 3001.2.2 of the code.
- 3001.2.1. Conveyors. Conveyors and related equipment shall conform to the requirements of ASME B20.1 listed in chapter 35.
- 3001.2.2. Automotive lifts. Automotive lifts shall conform to the requirements of ALI ALCTV listed in chapter 35.
- 3001.4. Change in use. A change in use of an elevator from freight to passenger, passenger to freight, or from 1 freight class to another freight class shall comply with the requirements of the Michigan elevator code, R 408.8101R 408.7001 to R 408.8695.
- 3002.5. Emergency doors. Where an elevator is installed in a single blind hoistway or on the outside of a building, there shall be installed in the blind portion of the hoistway or blank face of the building, an emergency door in accordance with the requirements of the Michigan elevator code, **R** 408.8101**R** 408.7001 to R 408.8695.
- 3002.6. Prohibited doors. Doors, other than hoistway doors and the elevator car door, shall be prohibited at the point of access to an elevator car.
- 3003.1. Standby power. In buildings and structures where standby power is required or furnished to operate an elevator, the operation shall be in accordance with sections 3003.1.1 to 3003.1.5 of the code.
- 3003.1.5. Lighting. Where standby power is connected to elevators, the machine room, car top, pit, and landing lighting shall be connected to the standby power source.
- 3003.2 Fire-fighters' emergency operation. Elevators shall be provided with phase I emergency recall operation and phase II emergency in-car operation in accordance with the requirements of the Michigan elevator code, **R** 408.8101**R** 408.7001 to R 408.8695.
- 3004.54. Plumbing and mechanical systems. Plumbing and mechanical systems shall not be located in an elevator shaft.

Exception: Floor drains, sumps, and sump pumps exclusively for draining the elevator pit shall be permitted at the base of the shaft provided they are indirectly connected to the plumbing system.

3004.65. Construction at bottom of hoistway. Pits extending to the ground shall have noncombustible floors and be designed as to prevent entry of ground water into the pit. The pit floor of any hoistway not extending to the ground shall be of fire-resistive construction having a fire-resistance rating at least equal to that required for the hoistway enclosure.

R 408.30459 Elevators.

- Rule 459. Sections 1007.4 and 1607.8.1 of the code are amended to read as follows: 1007.4. Elevators. To be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of the Michigan elevator code, R 408.7001 to R 408.8695.
- 1607.8.1. Elevators. Elevator loads shall be increased by 100% for impact and the structural supports shall be designed within the limits of deflection prescribed by the Michigan elevator code, R 408.7001 to R 408.8695.

R 408.30475 Existing structures.

Rule 475. Sections 3409.1, 3409.34 3409.56, 3409.67, and 3409.7.28.2, 3409.8.3 and 3410.6.14 of the code are amended to read as follows:

3409.1. Scope. The provisions of sections 3409.2 to 3409.8.53409.9 of the code apply to the maintenance, change of occupancy, additions, and alterations to existing buildings, including those identified as historic buildings in accordance with 1966 PA 1, MCL 125.1351 to 125.1356et seq.

Exception: Type B dwelling or sleeping units required by section 1107 are not required to be provided in existing buildings and facilities.

3409.34. Change of occupancy. Unless technically infeasible, section 3409.56 of the code shall be applied in accordance with 1966 PA 1, MCL 125.1351 to 125.1356et seq. 3409.56. Alterations. A building, facility, or element that is altered shall comply with the applicable provisions in chapter 11 of the code and ICC/ANSI A117.1 listed in chapter 35, unless technically infeasible. When compliance with this section is technically infeasible, then the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

- 1. The altered element or space is not required to be on an accessible route, unless required by section 3409.67 of the code.
- 2. Accessible means of egress required by chapter 10 of the code are not required to be provided in existing buildings and facilities.
- 3. Buildings, structures, or improved areas which exist on or before the effective date of these rules and which are in compliance with the code at the time of the issuance of the certificate of occupancy unless the alteration specifically modifies an area covered by sections 3409.67 to 3409.8.59.4 of the code.
- 4. The alteration to type A individually owned dwelling units within a group R-2 occupancy shall meet the provision for a type B dwelling unit and shall comply with the applicable provisions in chapter 11 and ICC/ANSI A 117.1 as listed in chapter 35.
- 3409.67. Alterations affecting an area containing a primary function. When an alteration affects the accessibility to, or contains an area of primary function, then the route to the primary function area shall be accessible. The accessible route to the primary function shall include accessible toilets and drinking fountains serving the area of the primary function.

Exceptions:

1. The costs of providing the accessible route is not required to exceed 20% of the costs of the alterations affecting the area of primary function.

- 21. This section does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets, and signs.
- **32**. This section does not apply to alterations limited solely to mechanical systems, electrical systems, the installation or alteration of fire-protection systems, and the abatement of hazardous materials.
- -4-3. This section does not apply to alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility, or element.
- 3409.7.28.2. Elevators. Altered elements of existing elevators shall comply with the Michigan elevator code, R-408.8101R 408.7001 to R 408.8695 and ICC/ANSI A 117.1 as listed in chapter 35. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.
- 3409.8.3. Platform lifts. Platform (wheelchair) lifts complying with ICC/ANSI A 117.1 and installed in accordance with the Michigan elevator code, R 408.7001 to R 408.8695 shall be permitted as a component of an accessible route.
- 3410.6.14. Elevator control. Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Elevator recall controls shall be provided in accordance with the Michigan elevator code, R 408.7001 to R 408.8695. Under the categories and occupancies in table 3410.6.14, determine the appropriate value and enter that value into table 3410.7 of the code under safety parameter 3410.6.14, elevator control, for fire safety, means of egress and general safety. The values shall be zero for a single-story building.

R 408.30495 Rodent proofing.

Appendix F101.1 of the code is amended **and F101.1.1 is added to the code** to read as follows:

- F101.1. General. Buildings or structures and the walls enclosing habitable or occupiable rooms and spaces in which people live, sleep, or work, or in which feed, food, or foodstuff is stored, prepared, processed, served, or sold shall be constructed in accordance with this section. Other buildings are subject to these requirements as provided in section F101.1.1 of the code.
- F101.1.1. Additional buildings. In a community that has a vermin infestation program for the eradication of vermin enacted by local ordinance, all buildings identified within such an ordinance shall be constructed in accordance with this section.

R 408.30499 Adoption of standards by reference; referenced codes.

Rule 499. Chapter 35 of the code is amended to add the following referenced codes, which are available from the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan 48864:

(a) Michigan Electrical Code seq., of the

R 408.30801 to R 408.30880et

(b) Michigan Mechanical Code seq., of the

Michigan Administrative Code. R 408.30901 to R 408.30998aa et

Michigan Administrative Code.

- (c) Michigan Plumbing Code seq., of the
- (d) Michigan Uniform Energy Code seq., of the
- (de) Michigan Elevator Code seq., of the
- (f) Michigan Boiler Code

R 408.30701 to R 408.30796et

Michigan Administrative Code. R 408.31061 to R 408.31099et

Michigan Administrative Code. R 408.81017001 to R 408.8695et

Michigan Administrative Code. R 408.4001 to R 408.5507 of the Michigan Administrative Code.

RESIDENTIAL CODE

R 408.30503 Approved materials and equipment.

Rule 503. Sections R104.9 of the code is amended to read as follows:

R104.9. Approved materials and equipment. Materials, equipment, and devices shall be constructed or installed in accordance with approvals granted under section 21 of 1972 PA 230, MCL 125.1521the act or by the building official. The building official shall review reports prepared by recognized evaluation services and determine if the intent of the code is met.

R 408.30504 Alternative materials, design, and methods of construction and equipment. Rule 504. Section R104.11 of the code is amended to read as follows:

R104.11. Alternative materials, design, and methods of construction and equipment. The provisions of the code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by the code, if the alternative has been approved. An alternative material, design, or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of the code, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in the code. Compliance with the specific performance-based provisions of the Michigan building, R 408.30401 to R 408.3049a547, electrical, R 408.30801 to R 408.30880, mechanical, R 408.30901a to R 408.30998a and plumbing, R 408.30701 to R 408.30796, codes instead of specific requirements of the code shall also be permitted as an alternate.

R 408.30505 Work exempt from permit..

Rule 505. Section R105.2 of the code is amended to read as follows:

R105.2. Work exempt from permit. Exemption from the permit requirements of the code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of the code or any other laws or ordinances of this jurisdiction. Permits are not required for any of the following:

- (a) Building permits shall not be required for any of the following:
- (i) One-story detached accessory structures, if the floor area does not exceed 200 square feet (18.58 m^2) .
- (ii) A fence that is not more than 6 feet (1829 mm) high.
- (iii) A retaining wall that is not more than 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.
- (iv) A water tank supported directly upon grade if the capacity is not more than 5,000 gallons (18 927 L) and the ratio of height to diameter or width is not greater than 2 to 1.
- (v) A sidewalk or driveway that is not more than 30 inches (762 mm) above adjacent grade and is not over any basement or story below.
- (vi) Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
- (vii) A prefabricated swimming pool that is less than 24 inches (610 mm) deep.
- (viii) Swings and other playground equipment accessory to a 1- or 2-family dwelling.
- (ix) Window awnings supported by an exterior wall which do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
- (b) Electrical permits shall not be required for the following;

Repairs and maintenance: A permit is not required for minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.

- (c) Mechanical permits shall not be required for any of the following:
- (i) Portable heating, cooking, or clothes drying appliances.
- (ii) Replacement of any minor part that does not alter approval of equipment or make the equipment unsafe.
 - (iii) A portable heating appliance.
- (iv) A portable ventilation appliance.
- (v) A portable cooling unit.
- (vi) Steam, hot or chilled water piping within any heating or cooling equipment regulated by the code.
- (vii) Replacement of any minor part that does not alter approval of equipment or make the equipment unsafe.
- (viii) A portable evaporative cooler.
- (ix) A self-contained portable refrigeration unit that is not more than 1.5 horsepower (1119 W).
- (x) Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.
- (xi) Gas piping limited to 10 feet (3048 mm) in length and not more than 6 fittings.
- (d) Plumbing permits shall not be required for any of the following:
- (i) The stopping of leaks in drains, water, soil, waste or vent pipe; if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, then the work is considered as new work and a permit shall be obtained and inspection made as provided in the code.
- (ii) The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures, and the removal and reinstallation of water closets, if the repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

Rule 506. Sections R106.1 and R802.10.1 of the code are amended and section R106.1.4 and figure 802.10.1 are added to the code to read as follows:

R106.1. Submittal documents. Construction documents, special inspection and structural program and other data shall be submitted in 1 or more sets with each application for a permit. The construction documents shall be prepared by or under the direct supervision of a registered design professional when required by article 20 of 1980 PA 299, MCL 339.101 to 339.2721et seq., and known as the Michigan occupational code. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

R106.1.4. Truss design data. As an alternative to the submission of truss design drawings, the truss design data sheet may be provided to the building official as part of the construction documents at the time of application. Truss design drawings shall be submitted to the building official prior to truss installation as required by section R802.10.1.

R802.10.1 Truss design drawings. Truss design drawings, prepared in conformance with section R802.10.1, shall be provided to the building official and approved prior to installation. The truss design data sheet, figure R802.10.1, may be provided to the building official at the time of permit application, as an alternative to design drawings as permitted in section R106.1.4. Truss design drawings shall include, at a minimum, the information specified below. Truss design drawings shall be provided with the shipment of trusses delivered to the jobsite.

- 1. Slope or depth, span, and spacing.
- 2. Location of all joints.
- 3. Required bearing widths.
- 4. Design loads as applicable.
- a. Top chord live load (including snow loads).
- b. Top chord dead load.
- c. Bottom chord live load.
- d. Bottom chord dead load.
- e. Concentrated loads and their points of application.
- f. Controlling wind and earthquake loads.
- 5. Adjustments to lumber and joint connector design values for conditions of use.
- 6. Each reaction force and direction.
- 7. Joint connector type and description (e.g., size, thickness, or gauge) and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface.
 - 8. Lumber size, species, and grade for each member.
- 9. Connection requirements for the following:
- a. Truss to truss girder.
- b. Truss ply to ply.
- c. Field splices.
- 10. Calculated deflection ratio and/or maximum description for live and total load.
- 11. Maximum axial compression forces in the truss members to enable the building designer to design the size, connections, and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss design drawing or on supplemental documents.

12. Required permanent truss member bracing location.

Roof Loading Data Sheet

Completion: Jurisdictional information should be included in this space

Authority: 1972 PA 230 Completion: Jurisdictional inform Completed prior to application for plan review and building permit. This form	nation s	should I	be inclu	ıded in	this spa	асе
s a voluntary form used to assist in the permit approval process. Applicant's Name:			Date:			
Applicant's Address:			Permit N	Number:		
City: State:			Zip:			
Applicant's Signature:			-			
lob Location:						
Address:						
Fownship/Village/City:	County:					
THIS FORM SHOULD BE COMPLETED BY THE PERMIT APPLICANT, OR DESIGN PROFESS FOR $C_{\rm e},C_{\rm t},$ AND I, PLACE AN "X" IN THE APPROPRIATE BOX THAT BEST DESCRIBES THE	STRU	CTUR				
Ground Exposure, P _g = From Figure R301.2	2(5) MF	RC or F	igure 1	608.2 N	ИВС	
Exposure Factor C _e	Fu	ılly	Pari	tially	Shelt	orod
	Expo	-		osed ²	Onen	cica
A Large city center with at least 1/2 the buildings exceeding 70 ft. in height.	N/A		1.1		1.3	
B Urban and suburban areas, wooded areas or other terrain with closely spaced objects having the size of single-family dwellings or larger.	0.9		1		1.2	
C Open terrain with scattered obstructions having heights less than 30 ft. (flat open country)	0.9		1		N/A	
D Flat unobstructed areas exposed to wind flowing over open water for a distance of at least 1 mile. (i.e. Great Lakes.)	0.8		0.9		N/A	
¹ Fully Exposed: Roofs exposed on all sides with no shelter by terrain, higher structures, or tropic shelter by terrain shelter by terrain shelter by the shelt						
Thermal Condition ⁴					C	C _t
All structures except as listed below Structures kept just above freezing and those with cold, ventilated roofs with an R factor of	25 or	areatei	r hetwe	en the	1	-
ventilated and heated spaces, such as attics	20 01	groato	botwo	2011 1110	1.1	
Unheated structures and those intentionally kept below freezing, such as seasonal building or stora	-	-			1.2	
Continuously heated greenhouse with a roof R Value less than 2 and having an interior temperal degrees 3 ft above the floor during winter months and a temperature alarm system or an attendant						
These conditions shall be representative of the anticipated conditions during winter months for the	life of	the str	ucture			
Importance Factor						
Category I Building and other structures representing low hazard to human life, i.e.: Agricultural, Temporary, and Minor Storage				0.8		
Facilities. II All buildings except those listed in Categories III and IV.					0.0	
III Building and other structures representing substantial hazard to human life in the event of failure.					1.1	
IV Buildings and other structures designated as essential facilities.					1.2	
Attic Live Load						
· · · · · · · · · · · · · · · · · · ·						/N /N

R 408.30507 Temporary power.

-Rule 507. Section R107.3 of the code is amended to read as follows:

R107.3. The building official is authorized to give permission to temporarily supply and use power in part of an electric installation before the installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat, or power in the Michigan electrical code, R 408.30801 to R 408.30880.Exhaust installation.

Rule 507. Section G2439.3 (614.4) of the code is amended to read as follows: G2439.3 (614.4). Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building, shall not terminate within 4 feet of a ventilated section in a soffit, and shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent, or chimney. Clothes dryer exhaust ducts shall not extend into or through ducts or plenums.

R 408.30508 Payment of fees.

Rule 508. Section R108.1 of the code is amended to read as follows:

R108.1. Fees. The fees prescribed in section 22 of 1972 PA 230, MCL 125.1522the act shall be paid to the enforcing agency of the jurisdiction before a permit to begin work for new construction, alteration, removal, demolition, or other building operation may be issued. In addition, an amendment to a permit necessitating an additional fee shall not be approved until the additional fee is paid.

R 408.30509 Frame and masonry inspection.

Rule 509. Section R109.1.4 of the code is amended to read as follows:

R109.1.4. Frame and masonry inspection. Inspection of framing construction shall be made after the roof, all framing, firestopping, draftstopping, and bracing are in place and after the plumbing, mechanical, and electrical rough inspections are approved. Masonry inspections shall be made before the installation of masonry veneer andafter the completed installation of base course flashing as specified in section R703.7.5 of the code and weather-resistant sheathing paperwater-resistive barrier as specified in section R703.2 of the code and after the masonry construction is completed.

R 408.30510 Use and occupancy.

Rule 510. Sections R110.1 and R110.2 of the code are amended to read as follows:

R110.1. Use and occupancy. A building or structure shall not be used or occupied, and a change in the existing occupancy classification of a building or structure or portion thereof shall not be made until a certificate of occupancy has been issued in accordance with section 13 of 1972 PA 230. MCL 125.1513.the act.

R110.2. Change in use. A change in the character or use of an existing structure shall not be made, except as specified in the Michigan building code, R 408.30401 to R 408.3049a547.

R 408.30511 Violation penalties.

Rule 511. Section R113.4 of the code is amended to read as follows:

R113.4. Violation penalties. It is unlawful for any person, firm, or corporation to violate a provision of the code or fail to conform with any of the requirements thereof, or erect, construct, alter, extend, repair, move, remove, demolish, or occupy any building, structure, or equipment regulated by the code, or cause work to be performed or done in conflict with or in violation of the approved construction documents or directive of the enforcing agency, or a permit or certificate issued under the code. A violator shall be assessed a fine in accordance with section 23 of 1972 PA 230, MCL 125.1523.the act.

R 408.30512 Notice to owner.

Rule 512. Section R114.1 of the code is amended to read as follows:

R114.1. Notice to owner. Upon notice from the enforcing agency, work on any building or structure that is being done contrary to the code or in a dangerous or unsafe manner shall immediately cease. The notice shall be in accordance with section 12 of 1972 PA 230, MCL 125.1512the act. Any person who is served with a stop work order, except for work that the person is directed to perform to remove a violation or unsafe condition is subject to the penalty provisions in section 23 of 1972 PA 230, MCL 125.1523-the act.

R 408.30513 Definitions.

Rule 513. The definitions of building, registered design professional, and sunroom addition in section R202 of the code are amended, the definition of residential building type is deleted, and the definition of structure is added to section R202 to read as follows: R202. Definitions.

"Building" means a combination of materials, whether portable or fixed, forming a structure affording a facility or shelter for use or occupancy by persons, animals, or property. The term does not include a building incidental to the use for agricultural purposes of the land on which the building is located if it is not used in the business of retail trade. The term shall be construed as though followed by the words "or part or parts of the building and all equipment in the building" unless the context clearly requires a different meaning.

"Registered design professional" means an individual who is licensed under article 20, 1980 PA 299, MCL 339.2001 to 339.2721et seq.

"Structure" means that which is built or constructed, an edifice or building of any kind, or a piece of work artificially built up or composed of parts joined together in some definite manner. Structure does not include a structure incident to the use for agricultural purposes of the land on which the structure is located and does not include works of heavy civil construction including without limitation any of the following:

- (a) A highway.
- (b) A bridge.
- (c) A dam.
- (d) A reservoir.
- (e) A lock.
- (f) A mine.
- (g) A harbor.

- (h) A dockside port facility.
- (i) An airport landing facility.
- (j) A facility for the generation, or transmission, or distribution of electricity.

Structure shall be construed as though followed by the word "or part or parts of the structure and all equipment in the structure," unless the context clearly indicates otherwise.

"Sunroom addition" means a new structure with glazing in excess of 40% of the gross area of the structure's exterior walls and roof added to an existing dwelling.

R 408.30514 Means of appeal.

Rule 514. Sections R112.1 and R112.3 of the code is are amended to read as follows:

R112.1 Means of appeal. An interested person has the right to appeal a decision of the enforcing agency to the board of appeals in accordance with the act. An application for appeal shall be based on a claim that the true intent of the code or the rules governing construction have been incorrectly interpreted, the provisions of the code do not apply, or an equal or better form of construction is proposed. The application shall be filed in accordance with section 14 of 1972 PA 230, MCL 125.1514. The decision of a local board of appeals may be appealed to the construction code commission in accordance with the act and timeframes.

Exception: Requests for barrier free design exception shall be in accordance with 1966 PA 1, MCL 125.1351 to 125.1356.

112.3 Qualifications. The board of appeals shall consist of members who are qualified in accordance with the act.

R 408.30516 Openings for underfloor ventilation.

- -Rule 516. Section R408.2 of the code is amended to read as follows:
- R408.2 Openings for underfloor ventilation. The minimum net area of ventilation openings shall not be less than 1 square foot (0.0929 m²) for each 150 square feet (100 m²) of underfloor space area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of the building. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed ¼ inch (6.4 mm):
- -a. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
- -b. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
- -c. Cast iron grills or grating.
- d. Extruded load bearing brick vents.
- e. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier.
- -f. Corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm). Exceptions:
- 1. Where warranted by climatic conditions, ventilation openings to the outdoors are not required if ventilation openings to the interior are provided.
- 2. The total area of ventilation openings may be reduced to 1/1,500 of the underfloor area where the ground surface is treated with an approved vapor retarder material and the required openings are placed so as to provide cross-ventilation of the space. The installation of operable louvers shall not be prohibited.

- -3. Underfloor spaces used as supply plenums for distribution of heated and cooled air shall comply with the requirements of section M1601.4.
- -4. Ventilation openings are not required where continuously operated mechanical ventilation is provided at a rate of 1.0 cfm (10 m²) for each 50 square feet (1.02 L/s) of underfloor space floor area and ground surface is covered with an approved vapor retarder material. **Design criteria**.

Rule 516. Table R301.2(1) of the code is amended and figures R301.2(7) and R301.2(8) are added to the code to read as follows:

TABLE R 301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground	Wind	Seismic	Subject to Damage From		Winter	Ice Barrier	Flood	Air	Mean	
Snow	Speed ^d	Design				Design	Underlay	Hazards	Freezing	Annual
Load	(mph)	Categoryf				Temp ^e	ment	g	Index ⁱ	Temp ^j
						•	Required ^h			-
			Weathering ^a	Frostline depth ^b	Termite ^c					
Figure R301.2(5)	90	See Sec.R301.2 .2.1 & Figure R301.2(2)	Severe	42" See Note b	Figure R301.2(6)	See Note e	Yes	See Note g	Figure R403.3 (2)	See footnote J

For SI: 1 pound per square foot = 0.0479 kN/m2, 1 mile per hour = 1.609 km/h.

- a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., "negligible", "moderate" or "severe") for concrete as determined from the weathering probability map [figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652 as listed in chapter 43.
- b. The frost line depth may be modified as provided in section R403.1.4 of the code.
- c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local damage.
- d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with section R301.2.1.4 of the code.
- e. The winter design temperature criteria shall be taken from appendix D of the Michigan plumbing code, R 408.30701 to R 408.30796.
- f. Design category determined from section R301.2.2.1 of the code.
- g. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction's entry into the national flood insurance program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the currently effective FIRM and FBFM or other flood hazard map adopted by the community, as may be amended. Absent (a) or (b), flood hazard areas as determined by the state under its administration of the Part 31, floodplain regulatory authority of the natural resources and environmental protection act, 1994 PA 451, MCL 324.101 to 324.90106, shall become the basis for regulation of floodplain

development within the community and section R324 of the code shall apply to buildings and structures within those areas

- h. In accordance with sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1 of the code, for areas where the average daily temperature in January is 25 degrees Fahrenheit (-4 degrees Celsius) or less, or where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES". Otherwise, the jurisdiction shall fill in this part of the table with "NO".
- i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (bf-days) from figure R403.3(2) or from the 100-year (99%) value on the national climatic data center data table "air freezing index- USA method (base 32 degrees Fahrenheit)".
- j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the national climatic data center data table "air freezing index-USA method (base 32 degrees Fahrenheit)" at www.ncdc.noaa.gov/fpsf.html.

R 408.30518 Means of egressModular ramps.

- Rule 518. Sections R311.6.4 and R311.4.2.1 areis added to the code and R311.4.2 of the code is amended to read as follows:
- R311.6.4 Modular ramps. Modular ramp systems approved pursuant to section 21 of 1972 PA 230, MCL 125.1521the act are not required to comply with the requirements of section R403.1.4 of the code.
- R311.4.2. Door type and size. The required exit door shall be a side-hinged door not less than 3 feet (914 mm) in width and 6 feet, 8 inches (2032 mm) in height. Other exterior hinged or sliding doors shall not be less than 24 inches in width and 6 feet, 6 inches in height.
- R311.4.2.1. Interior doors. Interior doors shall be not less than 24 inches in width and 6 feet, 6 inches in height.

Exception: Doors to areas less than 10 square feet of floor area.

R 408.30520 Doors. Wood wall framing.

- Rule 520. Section R311.4.2R602.10.5 of the code is amended and section R311.4.2.1 is added to the code to read as follows:
- R311.4.2. Type and size. The required exit door shall be a side-hinged door not less than 3 feet (914 mm) in width and 6 feet, 8 inches (2032 mm) in height. Other exterior hinged or sliding doors shall not be less than 24 inches in width and 6 feet, 6 inches in height.
- -R311.4.2.1. Interior doors. Interior doors shall be not less than 24 inches in width and 6 feet, 6 inches in height.
- Exception: Doors to areas less than 10 square feet of floor area.
- R602.10.5. Continuous structural panel sheathing. When continuous wood structural panel sheathing is provided in accordance with method 3 of R602.10.3 of the code, including areas above and below openings, braced wall panel lengths shall be in accordance with table R602.10.5 of the code. Wood structural panel sheathing shall be installed at corners in accordance with figure R602.10.5 of the code. The bracing amounts in table R602.10.1 of the code for method 3 shall be permitted to

be multiplied by a factor of 0.9 for walls with a maximum opening height that does not exceed 85% of the wall height or a factor of 0.8 for walls with a maximum opening height that does not exceed 67% of the wall height.

R 408.30521 Elevation requirements.

- Rule 521. Section R3234.2.1 of the code is amended to read as follows;
- R3234.2.1. Elevation requirements. (1) Buildings and structures shall have the lowest floor elevated 1 foot above the design flood elevation. Buildings and structures shall have the lowest floor including basements elevated so the lowest point of the floor's concrete or subfloor surface is 1 foot (305 mm) or more above the design flood elevation. The bottom of the lowest horizontal structural member of the floor system shall not be lower than the design flood elevation. Compliance with this elevation requirement shall be based upon measurement taken from the floor surface without the final floor covering and from the bottom of the lowest horizontal structural member of the floor system.
- (2) In areas of shallow flooding (AO zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet (mm) on the FIRM, or not less than 2 feet (51 mm) if a depth number is not specified. Crawl space interior floor grade elevation shall comply with R408.6 of the code.
- (3) Basement floors that are below grade on all sides shall be elevated to or above the design flood elevation. Basement floors that are below grade on all sides shall be considered lowest floors and shall be elevated so that the lowest point of the floor surface is 1 foot (305 mm) or more above the design flood elevation. Compliance with this elevation requirement shall be based upon measurement taken from the floor surface without the final floor covering.

Exception: Enclosed areas below the design flood elevation, including basements that have floors which are not below grade on all sides, shall meet the requirements of section R3234.2.2 of the code.

R 408.30522 Minimum depth.

Rule 522. Section R403.1.4 of the code is amended to read as follows:

R403.1.4. Minimum depth. All exterior footings and foundation systems shall extend 42 inches below actual grade. Where applicable, the depth of the footings shall also conform to sections R403.1.4.1 to R403.1.4.2 of the code.

Exceptions:

- -1. Frost-protected footings constructed in accordance with section R403.3 of the code and footings and foundations erected on solid rock shall not be required to extend below the frost line.
- 2. The footings in detached accessory structures not exceeding 400 square feet in area (37.16 m²) or 10 feet in height (3048 mm) shall extend 12 inches (305 mm) below grade to undisturbed soil or soils of sufficient bearing capacity. All vegetation and topsoil shall be removed for placement of accessory structures.
- -3. Upon evidence of the existence of any of the following conditions, the building official may modify the footing depth accordingly:
- (a) Freezing temperatures (freezing degree days).

- (b) Soil type.
- (c) Ground water conditions.
- (d) Snow depth experience.
- (e) Exposure to the elements.
- (f) Other specific conditions identified by the building official that may affect the foundation system.
- 4. Constructed in accordance with section R403.3.
- 5. Constructed in accordance with ASCE 32-01 as listed in chapter 43.
- -6. Decks not supported by a dwelling need not be provided with footings that extend below the frost line.

R 408.30525 Scope.

Rule 525. Section M1301.1 of the code is amended to read as follows:

M1301.1. Scope. The provisions of this chapter shall govern the installation of mechanical systems not specifically covered in other chapters applicable to mechanical systems. Installations of mechanical appliances, equipment, and systems not addressed by the code shall comply with the applicable provisions of the Michigan mechanical code, R 408.30901a to R 408.30998a and the international fuel gas code-listed in chapter 43.

R 408.30526 Sizing.

Rule 526. Section M1401.3 of the code is amended to read as follows:

M1401.3. Sizing. Heating and cooling equipment shall be sized in accordance with ANSI/ACCA manual S 3-2004, as listed in chapter 43, based on building loads calculated in accordance with the provisions of ACCA Manual J-1987, as listed in chapter 43 or other approved heating and cooling calculation methodologies. Ductwork shall be sized in accordance with the provisions of ACCA Manual D-1995, as listed in chapter 43.

R 408.30528 Terms defined in other codes.

Rule 528. Section G2402.3 of the code is amended to read as follows:

G2402.3. Terms defined in other codes. Where terms are not defined in the code and are defined in the Michigan electrical code, R 408.30801 to R 408.30880, Michigan building code, R 408.30401 to R 408.30499a547, international fire code listed in chapter 43, Michigan mechanical code, R 408.30901a to R 408.30998a or Michigan plumbing code, R 408.30701 to R 408.30796, the terms shall have the meanings ascribed to them as in those codes.

R 408.30529 Lining required.

Rule 529. Section P2709.2 of the code is amended as follows:

P2709.2. Lining required. The adjoining walls and floor framing enclosing on-site built-up shower receptors shall be lined with sheet lead, copper, or a plastic liner material that complies with ASTM D 4068 or ASTM D 4551 listed in chapter 43. The lining material shall extend not less than 3 inches (76 mm) beyond or around the rough jambs and not less than 3 inches (76 mm) above the finished thresholds.

R 408.30530 Relief valve discharge Requirements for discharge pipe.

Rule 530. Section P2803.6.1 of the code is amended to read as follows:

P2803.6.1. Relief valve discharge Requirements for discharge pipe. Relief valve discharge pipes shall be rigid pipe approved for water distribution with a rating of 210 degrees Fahrenheit. The discharge pipe shall be the same diameter as the relief valve outlet and shall drain by gravity flow. Valves shall not be connected in the relief valve discharge pipe. Relief valves shall not discharge so as to be a hazard, a potential cause of damage, or a nuisance. Discharge pipe from relief valves shall terminate atmospherically not more than 4 inches from the floor with an unthreaded end and shall not be directly connected to the drainage system. Relief valves shall not discharge so as to be a hazard, a potential cause of damage, or a nuisance. A relief valve discharge pipe shall be provided for each individual relief valve and shall meet all of the following:

- a. Shall terminate atmospherically not more than 4 inches (102 mm) from the floor with an unthreaded end.
- b. Shall not be interconnected.
- c. Valves shall not be connected in the relief valve discharge pipe.
- d. Shall be rigid pipe approved for water distribution, with a minimum temperature rating of 210 degrees Fahrenheit.
- e. Shall have the same nominal inside diameter as the relief valve outlet and shall drain by gravity flow.

The outlet of a pressure, temperature, or other relief valve shall not be directly connected to the drainage system.

R 408.30531 Solvent cementing.

- Rule 531. Section P2904.8.1 is added to the code to read as follows:
- P2904.8.1. Solvent cementing. Joint surfaces shall be clean and free from moisture and an approved primer shall be applied. Solvent cement, orange in color and conforming to ASTM F 493, as listed in chapter 43, shall be applied to all joint surfaces. The joint shall be made while the cement is wet and in accordance with ASTM D 2846 or ASTM F 493 as listed in chapter 43. Solvent cement joints shall be permitted above or below ground.
- Exception: A primer is not required where all of the following conditions apply:
- -a. The solvent cement used is third-party certified as conforming to ASTM F 493 as listed in chapter 43.
- b. The solvent cement used is yellow in color.
- -c. The solvent cement is used only for joining 1/2 inch (12.7 mm) through 2 inch (51 mm) diameter CPVC pipe and fittings.
- -d. The CPVC pipe and fittings are manufactured in accordance with ASTM D 2846 as listed in chapter 43. Duct construction.

Rule 531. Section M1601.3.1 of the code is amended to read as follows:

M1601.3.1. Joints and seams. Joints of duct systems shall be made substantially airtight by means of tapes, mastics, gasketing, cleats, or other approved closure systems. Joints of duct systems located outside the building thermal envelope shall be made airtight by means of tapes, mastics, caulk, gasketing, or other approved sealants. Closure systems used with rigid fibrous glass ducts shall comply with UL 181A and shall be marked "181A-P" for pressure-sensitive tape, "181A-M" for mastic or "181A-H" for heat-sensitive tape. Closure systems sued with flexible air

ducts and flexible air connectors shall comply with UL 181B and shall be marked "181B-FX" for pressure-sensitive tape or "181B-M" for mastic. Duct connections to flanges of air distribution system equipment or sheet metal fittings shall be mechanically fastened. Mechanical fasteners for use with flexible nonmetallic air ducts shall comply with UL 181B and shall be marked 181B-C. Crimp joints for round ducts shall have a contact lap of at least 1.5 inches (38 mm) and shall be mechanically fastened by means of at least 3 sheet metal screws or rivets spaced around the joint.

R 408.30534 Individual venting required. Venting.

Rule 534. Section P3105.1 and tables 3002.1 (1), 3002.1 (2) and 3002.2 are amended and section 3105.4P3106.2 and figure 3105.4 is are added to the code to read and figure N3 in appendix N of the code is amended to read as follows:

P3105.1. Distance of trap from vent. Each fixture trap shall have a protecting vent located so that the slope and the developed length in the fixture drain from the trap weir to the vent fitting are within the requirements set forth in table P3105.1 of the code.

P3106.2. Individual venting required. When fixtures other than water closets discharge into a 3-inch horizontal branch downstream from a water closet, then each fixture connected to the branch within 54 inches (1371.6 mm) downstream of the water closet flange shall be vented individually. P3105.4. Vertical leg for waste fixture drains. A vertical leg (see figure P3105.4) is permitted within a fixture drain of a waste fixture in accordance with the following criteria:

- 1. Minimum trap diameter shall be in accordance with table P3201.7 of the code.
- 2. The diameter of section A shall be equal to the diameter of the trap.
- 3. The length of section A shall not be less than 8 inches (203 mm) and in accordance with table P3105.1 of the code.
- 4. The diameter of section B shall be 1 pipe size larger than the diameter of Section A.
- 5. The length of section B shall not be more than 36 inches (914 mm).
- 6. The diameter of section C shall be 1 pipe size larger than the diameter of section B.
- 7. The total length of section A and section C shall not exceed the distance allowed in table P3105.1 of the code.
- 8. Bends shall be the diameter of the largest connected section.

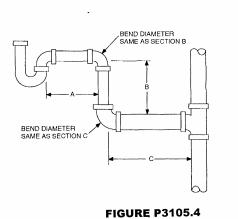


FIGURE P3105.4
VERTICAL LEG FIXTURE DRAIN SCHEMATIC

Figure N3. Typical horizontal wet venting.

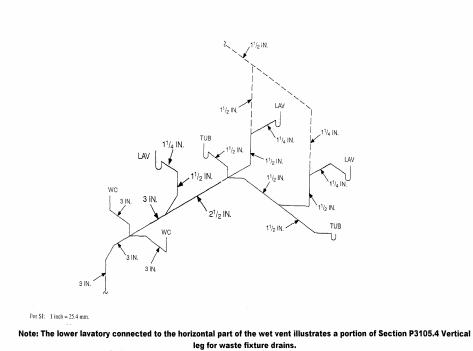


TABLE P3002.1 (1)
AROVE-GROUND DRAINAGE AND VENT PIPE

FIGURE N3
TYPICAL HORIZONTAL WET VENTING

ADOVE-GROUND DRAINAGE AND VENTILLE			
MATERIAL	STANDARD		
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 2661; ASTM F 628; CSA B 181.1		

Brass pipe	ASTM B 43
Cast-iron pipe	ASTM A 74; CISPI 301; ASTM A 888
Coextruded composite ABS DWV schedule 40 IPS pipe (solid)	ASTM F 1488
Coextruded composite ABS DWV schedule 40 IPS pipe (cellular core)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (solid)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (cellular core)	ASTM F 1488; ASTM F 891
Coextruded composite ABS IPS-DR, PS140, PS200 DWV	ASTM F 1488
Coextruded composite PVC IPS-DR, PS140, PS200 DWV	ASTM F 1488
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 306
Galvanized steel pipe	ASTM A 53
Polyolefin pipe	CSA B181.3
Polyvinyl chloride (PVC) plastic pipe (Type DWV)	ASTM D 2665; ASTM D 2949; CSA B181.2; ASTM F 1488
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

TABLE P3002.1(2) UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

	CTANDADD
MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 2661; ASTM F 628; CSA B181.1
Asbestos-cement pipe	ASTM C 428
Cast-iron pipe	ASTM A 74; CISPI 301; ASTM A 888
Coextrueded composite ABS DWV schedule 40 IPS pipe (solid)	ASTM F 1488
Coextruded composite ABS DWV schedule 40 IPS pipe (cellular core)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (solid)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (cellular core)	ASTM F 891; ASTM F 1488
Coextruded composite ABS IPS-DR, PS140, PS200 DWV	ASTM F 1488
Coextruded composite PVC IPS-DR, PS140, PS200 DWV	ASTM F 1488
Copper or copper alloy tubing (Type K, L, M or DWV)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 306
Polyolefin pipe	ASTM F 1412; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe (Type DWV)	ASTM D 2665; ASTM D 2949; CSA B181.2
Stainless steel drainage systems, Type 316L	ASME A112.3.1

TABLE P3002.2 BUILDING SEWER PIPE

MATERIAL	STANDARD		
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 2661; ASTM D 2751; ASTM F 628		
Asbestos-cement pipe	ASTM C 428		
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301		
Coextruded composite ABS DWV schedule 40 IPS pipe	ASTM F 1488		

(solid)	
Coextruded composite ABS DWV schedule 40 IPS pipe (cellular core)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (solid)	ASTM F 1488
Coextruded composite PVC DWV schedule 40 IPS pipe (cellular core)	ASTM F 1488; ASTM F 891
Coextruded composite ABS IPS-DR-PS DWV, PS140, PS200	ASTM F 1488
Coextruded composite PVC IPS-DR-PS DWV, PS140, PS200	ASTM F 1488
Coextruded composite ABS sewer and drain DR-PS in PS35, PS50, PS100, PS140, PS200	ASTM F 1488
Coextruded composite PVC sewer and drain DR-PS in PS35, PS50, PS100, PS140, PS200	ASTM F 1488
Coextruded composite PVC sewer and drain PS 25, PS 50, PS 100 (cellular core)	ASTM F 891
Concrete pipe	ASTM C 14; ASTM C 76; CSA A 257.1M; CSA A 257.2M
Copper or copper-alloy tubing (Type K or L)	ASTM B 75; ASTM B 88; ASTM B 251
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F 714
Polyolefin pipe	ASTM F 1412; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe (Type DWV, SDR	ASTM D 2665; ASTM D 2949; ASTM D 3034; ASTM F
26, SRD35, SDR41, PS50 or PS100)	1412; CSA B182.2; CSA B182.4
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C 425; ASTM C 700

R 408.30536 General Electrical, general, electrical conductors and connections and electrical grounding. Rule 536. Sections E3301.1, and E 3301.2, E3306.7, E3808.8.1, E3808.8.2, and table E3502.2 of the code are amended to read as follows:

E3301.1. Applicability. The provisions of chapters 33 to 42 of the code shall establish the general scope of the electrical system and equipment requirements of the code. Chapters 33 to 42 of the code cover those wiring methods and materials most commonly encountered in the construction of 1- and 2-family dwellings and structures regulated by the code. Other wiring methods, materials, and subject matter covered in the Michigan electrical code, R 408.30801 to R 408.30880 are also allowed by the code.

E3301.2. Scope. Chapters 33 to 42 of the code shall cover the installation of electrical systems, equipment, and components indoors and outdoors that are within the scope of the code, including services, power distribution systems, fixtures, appliances, devices, and appurtenances. Services within the scope of the code shall be limited to 120/240 volt, 0- to 400- ampere, single-phase systems. These chapters specifically cover the equipment, fixtures, appliances, wiring methods, and materials that are most commonly used in the construction or alteration of 1- and 2-family dwellings and accessory structures regulated by the code. The omission from these chapters of any material or method of construction provided by the Michigan electrical code, R 408.30801 to R 408.30880, shall not be construed as prohibiting the use of such material or method of construction. Electrical systems, equipment, or components not specifically covered in these chapters shall comply with the applicable provisions of the Michigan electrical code, R 408.30801 to R 408.30880.

E3306.7. Conductors of the same circuit. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors shall be contained within the same raceway, cable, trench or cord.

TABLE E3502.2 MINIMUM SERVICE LOAD CALCULATION

LOADS AND PROCEDURE

3 volt-amperes per square foot of floor area for general lighting and general use receptacle outlets.

Plus

1,500 volt-amperes total number of 20-ampere-rated small appliance and laundry circuits.

Plus

The nameplate volt-ampere rating of all fastened-in-place, permanently connected or dedicated circuit-supplied motors and appliances such as ranges, ovens, cooking units, clothes dryers, and water heaters.

Apply the following demand factors to the above subtotal:

The minimum subtotal for the loads above shall be 100% of the first 10,000 volt-amperes of the sum of the above loads plus 40% of any portion of the sum that is in excess of 10,000 volt-amperes.

Plus the largest of the following:
Nameplate rating(s) of the air-conditioning and cooling equipment.

Nameplate rating(s) of the heating where a heat pump is used without any supplemental electric heating.

Nameplate rating of the electric thermal storage and other heating systems where the usual load is expected to be continuous at the full nameplate value. Systems qualifying under this selection shall not be figured under any other category in this table.

One hundred percent of nameplate rating of the heat pump compressor and 65 percent of the supplemental electric heating load for central electric space-heating systems. If the heat pump compressor is prevented from operating at the same time as the supplementary heat, the compressor load does not need to be added to the supplementary heat load for the total central electric space-heating load.

Sixty-five percent of nameplate rating(s) of electric space-heating units if less than 4 separately controlled units.

Forty percent of nameplate rating(s) of electric space-heating units of 4 or more separately controlled units.

The minimum total load in amperes shall be the volt-ampere sum calculated above divided by 240 volts.

E3808.8.1. Grounding of flexible metal conduit. Flexible metal conduit shall not be permitted as an equipment grounding conductor.

E3808.8.2. Grounding of liquid-tight flexible metal conduit. Liquid-tight flexible metal conduit shall not be permitted as an equipment grounding conductor.

R 408.30539 Plastic pipeSolvent cementing.

Rule 539. Sections P3003.3.6.1 and P3003.3.6.2P3003.14.2 are added toof the code is amended to read as follows:

P3003.3.6.1. ABS plastic pipe. Solvent cement for ABS plastic pipe conforming to ASTM D 2235, as listed in chapter 43, shall be applied to all joint surfaces.

P3003.3.6.2 PVC plastic pipe. A primer complying with ASTM F 656, as listed in chapter 43, shall be applied to all PVC solvent cemented joints. Solvent cement for PVC plastic pipe conforming to ASTM D 2564, as listed in chapter 43, shall be applied to all joint surfaces.P3003.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A primer that conforms to ASTM F 656, as listed in chapter 43, shall be applied. Solvent cement not purple in color and conforming to ASTM D 2564, CSA B137.3 or CSA B181.2, as listed in chapter 43, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and shall be in accordance with ASTM D 2855, as listed in chapter 43. Solvent-cement joints shall be permitted above or below ground.

R 408.30540 Distance of trap from vent. Elevators and platform lifts.

Rule 540. Sections **R323.1** and **R323.2** P3105.1 of the code isare amended to read as follows:

P3105.1. Distance of trap from vent. Each fixture trap shall have a protecting vent located so that the slope and the developed length in the fixture drain from the trap weir to the vent fitting are within the requirements set forth in table P3105.1.

R323.1. Elevators. Where provided, passenger elevators, limited-use/limited-application elevators or private residence elevators shall comply with the Michigan elevator rules R 408.7001 to R 408.8695.

R323.2. Platform lifts. Where provided, platform lifts shall comply with the Michigan elevator rules R 408.7001 to R 408.8695.

R 408.30543 Boiler low-water cutoff.

Rule 543. Section M2002.5 of the code is amended to read as follows:

M2002.5. Boiler low-water cutoff. All steam and hot water boilers shall be protected with a low-water cutoff control. The low-water control shall automatically stop the combustion operation of the appliance when the water level drops below the lowest safe water level as established by the manufacturer. The low-water cut off

on all low-pressure boilers shall be installed in accordance with **the Michigan boiler rules**, **R 408.4001 to R 408.5507**. ASME code section IV which is adopted by reference in these rules. The code is available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan 48864, or from the American Society of Mechanical Engineers, Three Park Avenue, New York, New York, 10016-5990, at a cost as of the time of adoption of these amendatory rules of \$260.00.

A low-water cutoff shall be of the float or probe type or paddle-type non-reversing flow switch.

R 408.30544 Concrete and masonry foundation dampproofing.

- Rule 544. Section R406.1 of the code is amended to read as follows:
- R406.1. Concrete and masonry foundation dampproofing. Except where required to be waterproofed by section R406.2, foundation walls that retain earth and enclose habitable or usable spaces located below grade shall be dampproofed from the top of the footing to the finished grade. Masonry walls shall have not less than 3/8 inch (9.5 mm) Portland cement parging applied to the exterior of the wall. The parging shall be dampproofed with a bituminous coating, 3 pounds per square yard (1.63 kg/m²) of acrylic modified cement, 1/8 inch (3.2 mm) coat of surface bonding mortar complying with ASTM C 887, as listed in chapter 43, or any material permitted for waterproofing in section R406.2. Concrete walls shall be dampproofed by applying any 1 of the above listed dampproofing materials or any 1 of the waterproofing materials listed in section R406.2 to the exterior of the wall.
- Exception: Parging of unit masonry walls is not required where a material is approved for direct application to the masonry. Light, ventilation and heating.
- Rule 544. Section R303.4.2 of the code is amended to read as follows:
- R303.4.2. Exhaust openings. Outside exhaust openings shall be located as not to create a nuisance. Exhaust openings shall not be directed onto walkways. Exhaust openings shall not terminate within 2 feet of a ventilated section in a soffit.

R 408.30545 Exterior covering.

Rule 545. Sections R703.2, R703.6, and R703.8, and table R703.4 of the code are amended to read as follows: R703.2. Weather resistive sheathing paper. A minimum of one layer of No. 15 asphalt felt complying with ASTM D 226, as listed in chapter 43, for type 1 felt or other approved weather resistive materials shall be applied over sheathing of all exterior walls. See table R703.4. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). Where joints occur, felt shall be lapped not less than 6 inches (152 mm). Building paper or other approved material shall be continuous up to the underside of the rafter or truss top chord and terminated at penetrations and building appendages in such a manner to meet the requirements of the exterior wall envelope as described in section R703.1.

-Exception: Such felt or material is permitted to be omitted in detached accessory buildings.

Table R703.4 WEATHER RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

					TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS bed						
					Wood or	Fiberboard	Gypsum	Foam	Direct to	Number or	
					Wood	Sheathing	Sheathing	Plastic	studs	Spacing of	
		NOMINAL		SHEATHING	Structural	Into stud	Into stud	Sheathing		fasteners	
SIDING MATERIAL		THICKNESS *	JOINT	PAPER	Panel			Into stud			
		(INCHES)	TREATMENT	REQUIRED	sheathing						
	Without	0.019 ^f	Lap	Yes	0.120 nail	0.120 nail	0.120	0.120 nail*	Not allowed	Same as	
	Insulation				11/2" long	2" long	2" long			stud	
Horizontal		0.024	Lap	Yes	0.120 nail	0.120 nail	0.120 nail	0.120 nail*	Not allowed	spacing	
Aluminume			-		11/2" long	2" long	2" long				

	With	0.019	Lap	Yes	0.120 nail	0.120 na).120 nail	0.120 nail*	0.120 nail	
	Insulation				11/2" long	21/2" lon	g 2	2 1/2" long		11/2" long	
Hardboard ¹ Panel siding-vertical		7/16	Note g	Yes	Note o Note o		4	Note o	Note o	Note o	6" panel edges 12" inter. Sup.
Hardboard ¹ Lap-siding-horizontal		7/16	Note r	Yes	Note q Note q		4	Vote q	Note q	Note q	Same as stud spacing
Steel [‡]		29ga.	Lap	Yes	0.113 nail 0.113 nail 1¾" 2¾" Staple 1¾" Staple 2 ½"		2	0.113 nail 2½" Staple-2 4"	0.113 nail ² 2½Staple ²	Not allowed	Same as stud spacing
Particleboard panels		3/8-1/2	Note g	Yes	6d box nail	6d box r	nail 6	od box nail	Box nail*	6d box nail, 3/8 not allowed	6" panel edge 12" inter. Sup.
		5/8	Note g	Yes	6d box nail	8d box r	nail 8	d box nail	box nail*	6d box nail	
Plywood panel (exterior grade		3/8	Note g	Yes	0.099 nail-2"	0.113 nail-21/2).099 ail-2"	0.113 nail ² Staple ²	0.099 nail-2"	6" on edges
Vinyl Siding *		0.035	Lap	Yes	0.120 nail 1½" Staple- 1¾"	0.120 na Staple 2		0.120 nail 2" Staple-2½"	.0120 nai1* Staple*	Not allowed	Same as stud spacing
Wood * Rustic, drop		3/8 Min	Lap	Yes		•				0.113 nail-	Face
Shiplap	,	19/32 Average	Lap	Yes					21/2" Staple-2"	nailing up	
Bevel		7/16					widths, 1				
Butt tip		3/16	Lap	Yes							bearing; 8" widths and over, 2 nails per
Brick veneer		2	Section R703	Yes	See Section R703 and Figure R703.7 ^h						
Concrete maso	nry veneer	2		(Note m)							
Stone veneer		2	Section R703	Yes (Note m)	See Section R703 and Figure R703.7 th						
Fiber cement p	anel siding*	5/16	Note t	Yes	6d corrosion resistant nail*		6d corrosic resistant na			4-d corrosion resistant nail*	6" oc on edges, 12" oc on intermed. Studs
Fiber cement la		5/16	Note w	Yes Note y	6d corrosion re		6d corrosic resistant na			6d corrosion resistant nail*	Note x

For SI: 1" = 25.4 mm

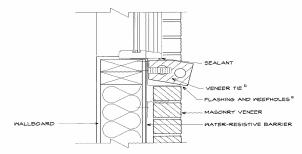
- -a. Based on stud spacing of 16 inches on center where studs are spaced 24 inches, siding shall be applied to sheathing approved for that spacing.
- -b. Nail is a general description and shall be T-head, modified round head, or round head with smooth or deformed shanks.
- -c. Staples shall have a minimum crown width of 7/16 inch outside diameter and be manufactured of minimum 16 gage wire.
- -d. Nails or staples shall be aluminum, galvanized, or rust preventative coated and shall be driven into the studs for fiberboard or gypsum backing.
- e. Aluminum nails shall be used to attach aluminum siding.
- -f. Aluminum (0.019 inch) shall be unbacked only when the maximum panel width is 10 inches and the maximum flat area is 8 inches. The tolerance for aluminum siding shall be +0.002 inch of the nominal dimension.
- g. Sheathing paper required.
- -h. All attachments shall be coated with a corrosion resistive coating.
- i. Shall be of approved type.
- -j. Three eights inch plywood shall not be applied directly to studs spaced greater than 16 inches on center when long dimension is parallel to studs. One half inch plywood shall not be the face grain perpendicular to the studs or over sheathing approved for that stud spacing.
- -k. Wood board sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches on center. Nails shall penetrate 1.5 inches into studs, studs and wood sheathing combined, or blocking. A weather resistant membrane shall be installed weatherboard fashion under the vertical siding unless the siding boards are lapped or battens are used.
- -l. Hardboard siding shall comply with AHA A135.6 as listed in chapter 43.
- -m. For masonry veneer, a weather resistant sheathing paper is not required over a sheathing that performs as a weather resistive barrier when a 1 inch air space is provided between the veneer and the sheathing. When the 1 inch space is filled with mortar, a weather resistant sheathing paper is required over study or sheathing.
- -n. Vinyl siding shall comply with ASTM D 3679 as listed in chapter 43.
- -o. Minimum shank diameter of 0.092 inch, minimum head diameter of 0.025 inch, and nail length shall accommodate sheathing and penetrate framing 1.5 inches.

- -p. When used to resist shear forces, the spacing must be 4 inches at panel edges and 8 inches on interior supports.
- -q. Minimum shank diameter of 0.099 inch, minimum head diameter of 0.240 inch, and nail length shall accommodate sheathing and penetrate framing 1.5 inches.
- -r. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.
- -s. Fiber cement siding shall comply with the requirements of ASTM C 1186 as listed in chapter 43.
- -t. See section R703.10.1 of the code.
- -u. Minimum 0.102 inch smooth shank, 0.255 inch round head.
- -v. Minimum 0.099 inch smooth shank, 0.250 inch round head.
- -w. See section R703.10.2 of the code.
- -x. Face nailing: 2 nails at each stud. Concealed nailing: one 11 gage 1 1/2 galvanized roofing nail (0.371 inch head diameter, 0.120 inch shank) or 6d galvanized box nail at each stud.
- y. See exceptions in section R703.2 of the code.
- -z. Minimum nail length shall accommodate sheathing and penetrate framing 1.5 inches.

- R703.6. Exterior plaster. Installation of these materials shall be in compliance with ASTM C 926, which is adopted by reference in these rules and ASTM C 1063, as listed in chapter 43. The ASTM C 926 standard is available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan 48864, or from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428, at a cost as of the time of adoption of these amendatory rules of \$30.00.
- R703.6.3. Weather resistant barriers. Weather resistant barriers shall be installed as required in section R703.2 and, where applied over wood-based sheathing, shall include a weather-resistive vapor permeable barrier with a performance at least equivalent to 2 layers of grade D paper.
- R703.8. Flashing. Approved corrosion resistive flashing shall be provided in the exterior wall envelope in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. The flashing shall extend to the surface of the exterior wall finish and shall be installed to prevent water from reentering the exterior wall envelope. Flashing shall extend to, or beyond, the finished exterior face of the wall. Approved corrosion resistive flashing shall be installed at all of the following locations:
- 1. At top of all exterior window and door openings in such a manner as to be leakproof, except that self-flashing windows having a continuous lap of not less than 1 1/8 inches (28 mm) over the sheathing material around the perimeter of the opening, including corners, do not require additional flashing; jamb flashing may also be omitted when specifically approved by the building official.
- -2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
- 3. Under and at the ends of masonry, wood, or metal copings and sills.
- 4. Continuously above all projecting wood trim.
- -5. Where exterior porches, decks, or stairs attach to a wall or floor assembly of wood frame construction.
- 6. At wall and roof intersections.
- 7. At built-in gutters. Exterior covering.
- Rule 545. Sections R703.7.3, R703.7.4.1, 703.7.5 and R703.7.6 and figures R703.7, R703.7.2.1, and R703.7.2.2, of the code are amended to read as follows:
- R703.7.3. Lintels. Masonry veneer shall not support any vertical load other than the dead load of the veneer above. Veneer above openings shall be supported on lintels of noncombustible materials and the allowable span shall not exceed the values set forth in Table R703.7.3 of the code. The lintels shall have a length of bearing not less than 4 inches (102 mm). Steel lintels shall be corrosion-resistant.
- R703.7.4.1. Size, spacing, and corrosion protection. Veneer ties, if strand wire, shall not be less in thickness than no. 9 U.S. gauge [(0.148 in.) (4 mm)] wire and shall have a hook embedded in the mortar joint, or if sheet metal, shall be not less than no. 22 U.S. gauge [(0.0299 in.) (0.76 mm)] by 7/8 inch (22 mm) corrugated. Each tie shall be spaced not more than 24 inches (610 mm) on center horizontally and vertically and shall support not more than 2.67 square feet (0.25 m^2) of wall area. Corrosion protection shall be provided for all veneer ties as required by section R606.15.1 of the code.
- 703.7.5. Flashing. Approved flashing shall be installed beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points

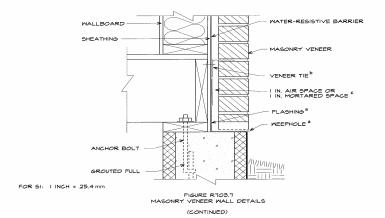
of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with section R703.7 of the code. See section R703.8 of the code for additional requirements.

R703.7.6. Weepholes. Weepholes shall be provided in the outside wythe of masonry walls at a maximum spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (5 mm) in diameter. Weepholes shall be located immediately above and directly on the flashing.



FOR SI: 1 INCH = 25,4 mm

FIGURE RTOS.7 MASONRY VENEER WALL DETAILS (CONTINUED)



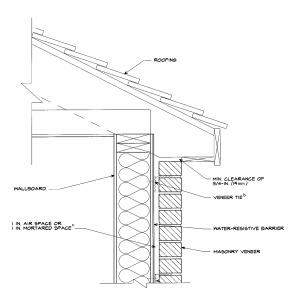
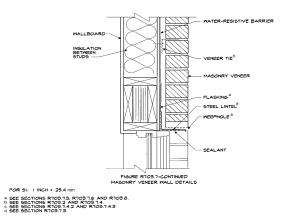
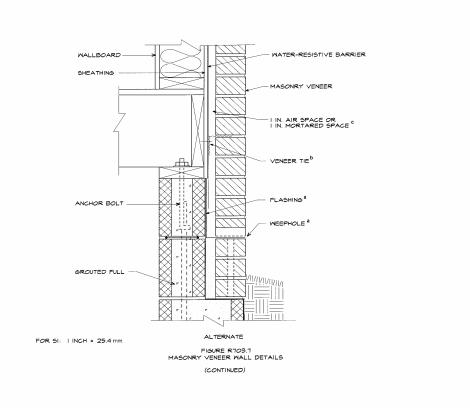


FIGURE R703.7-CONTINUED MASONRY VENEER WALL DETAILS

FOR 51: 1 INCH = 25.4 mm

a SEE SECTIONS RT03.15, RT03.16 AND RT03.6.
b SEE SECTIONS RT03.2 AND RT03.1.4.
c SEE SECTIONS RT03.1.4.2 AND RT03.1.4.3
d SEE SECTION RT03.1.4.2





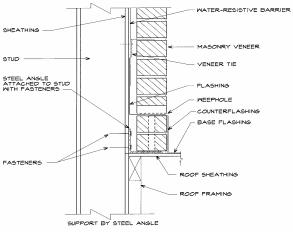


FIGURE R703.7.2.1 EXTERIOR MASONRY VENEER SUPPORT BY STEEL ANGLES

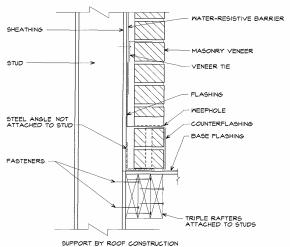


FIGURE RIOS LONGINUSTION
FIGURE RIOS 1.2.2
EXTERIOR MASONRY VENEER SUPPORT BY ROOF CONSTRUCTION

R 408.30546 Smoke alarm locations.

Rule 546. Sections R313.34 and R313.45 of the code are addedamended to readthe code as follows:

- R313.34. Smoke alarm locations in existing buildings constructed before November 6, 1974. Within each dwelling unit or sleeping unit, a single-station smoke alarm shall be installed in the following locations:
- 1. In each sleeping room or each area directly outside the sleeping room.
- 2. On each floor level including the basement level.

For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than 1 full story below the upper level.

- R313.-4-5. Equipment requirements. The required equipment for smoke alarms shall consist of the following:
- 1. Installation. Smoke alarm devices shall be listed and installed in accordance with the manufacturer's installation requirements, the provisions of the code and the provisions of NFPA 72 which is adopted by reference in these rulesas listed in chapter 43. The standard is available for inspection at the Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 2501 Woodlake Circle, Okemos, Michigan, 48864, or from NFPA, 1 Batterymarch Park, Quincy, MA, 02269-9101, at a cost as of the time of adoption of these amendatory rules of \$ 48.00.
- 2. Power Source. The equipment shall be operable by power from 1 of the following primary sources.
- a. The building wiring provided that such wiring is served from a commercial source and is equipped with a battery backup. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.
- b. A non-rechargeable battery that is capable of operating the smoke alarm in the normal condition for a life of 5 years.
- c. A rechargeable battery, with proper charging, able to power the alarm for a life of 5 years and shall be automatically recharged by an AC circuit of the commercial light and power source.
- d. A household use alarm system with battery backup listed and approved in accordance with the household fire warning equipment provisions of NFPA 72, as referenced in Section R313.4 of the code.
- 3. Audible Alarm Notification. The activation of the alarm signal shall produce a sound that is audible in all occupiable dwelling areas.
- 4. Testing and Maintenance. The owner of a dwelling unit, in which required or optional fire detection or fire protection systems equipment is installed, shall be responsible for the proper operation, testing, and maintenance of the equipment in accordance with the manufacturer's instructions included with the equipment. The occupant of rental dwelling units shall be responsible for the periodic operational testing and periodic cleaning of the installed equipment within the rental unit in accordance with the testing instructions provided in the manufacturer's instructions for the equipment. If the system fails, breaks, or is out of service, it shall be repaired and functional within 30 days.

Exception: Smoke alarms and devices installed in buildings constructed before November 6, 1974 where an installation was approved by the appropriate enforcing agency under regulations

in effect at the time of the installation shall be considered to comply with the provisions of the code.

R 408.30547. Referenced standards Barrier requirements.

Rule 547. The TPI standard in chapter 43 of the code is amended to update the standard to the TPI 1-2002 editionSection AG105.5 of the code is amended to read as follows.

Section AG105.5. Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in section AG107 of the code, shall be exempt from the provisions of sections AG105.2, AG105.3, and AG105.4 of the code.